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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,133	11/16/2001	Atsushi Muramatsu	KASAP008	5220

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EXAMINER
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NGUYEN, XUAN LAN T

ART UNIT	PAPER NUMBER
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3683

DATE MAILED: 06/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/991,133

Applicant(s)

MURAMATSU ET AL.

Examiner

Lan Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-14 and 16-20 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7, 14 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeo et al. (Japanese publication # 10-061715). Please refer to the translation of JP 10-061715, which has been sent to Applicant with the Interview Summary on 4/28/04).

Re: claims 1 and 2, Takeo et al. show in figure 1, a pneumatically operated active vibration damping device, as in the present invention, comprising: a first 6 and a second 9 mounting member; an elastic body 7 partially defining a pressure-receiving chamber 11, said pressure-receiving chamber 11 being filled with a non-compressible fluid, as shown; an easily deformable flexible diaphragm 22 partially defining an equilibrium chamber 21 on one of opposite sides thereof, said equilibrium chamber being filled with said non-compressible fluid and having a volume easily variable; a first orifice passage 4 for fluid communication between said pressure-receiving chamber 11 and said equilibrium chamber 21; an elastic oscillating plate 12 partially defining said pressure-receiving chamber 11 and an oscillating air chamber 13 as claimed; paragraph [0018], from page 25/42 to page 26/42, describes the operating of said oscillating plate

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as claimed; a static pressure control mechanism 25, 23 adapted to substantially statically change said fluid pressure in said pressure receiving chamber 11, so as to induce a substantially static elastic deformation of said elastic oscillating plate for changing a spring stiffness of said elastic oscillating plate. See page 26/42, lines 14-16 wherein Takeo shows that in one condition, flow from liquid chamber 11 ceases to flow through the inside of the above mentioned small diameter orifice 5; hence, effectively isolating chamber 31 from chamber 11. In this condition, Takeo's vibration damping device would comprise the same structure as the claimed invention of not having chamber 31 to effect chamber 11.

Re: claim 3, Takeo et al. further shows a static working air chamber 23 partially defined by and formed on the opposite of said flexible diaphragm 22 remote from said equilibrium chamber 11 wherein the operation of the working air chamber is being described in paragraph [0018], from page 25/42 to page 26/42.

Re: claim 4, Takeo shows a static pressure regulating switch valve 25 as claimed.

Re: claim 5, Takeo shows in figure 1 oscillation air chamber 13 and switching valve 16 to switch between atmosphere and vacuum.

Re: claim 6, Takeo shows in figure 1, an active pressure regulating switch valve 16, and a static pressure regulating switch valve 25; and the operation as claimed in paragraph [0018].

Re: claim 7, Takeo further shows a restricting member 14; and paragraph [0019] shows that when vacuum is fed into chamber 13, oscillating plate is in abutting contact

with the restricting member 14. Paragraph [0018], from page 25/42 to page 26/42, describes the operating of said oscillating plate as claimed; a static pressure control mechanism 25, 23 adapted to substantially statically change said fluid pressure in said pressure receiving chamber 11, so as to induce a substantially static elastic deformation of said elastic oscillating plate for changing a spring stiffness of said elastic oscillating plate.

Re: claim 14, figure 1 shows an active pressure switch valve 16 and its operation as claimed.

Re: claim 16, figure 1 shows said second mounting member 9 has a cylindrical cup shape and is open to said first mounting member 6 with said elastic body 7 interposed in between; a partition structure 14, 24 wherein said partition structure cooperating with said elastic body to form said pressure receiving chamber 11, and including an integrally formed restricting member 14 to support elastic oscillating plate 12 and cooperates with said elastic oscillating plate to form said oscillating air chamber 13; wherein said flexible diaphragm 22 is located between said partition structure and a bottom of said second mounting as shown, said flexible diaphragm cooperating with said partition structure to form said equilibrium chamber 21 on one side and a static working air chamber 23 on the other, said working air chamber undergoing a static change of an air pressure therein which is applied to said pressure receiving chamber via first orifice 4.

Re: claim 17, figure 1 shows first orifice 4 being defined at an outer circumference portion thereof.

Re: claim 18, figure 1 further shows a pressure transmitting passage connecting chamber 13 to valve 16.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeo et al. (Japanese publication # 10-061715) in view of Muramatsu (USP 5,170,998).

Re: claims 9 and 10, figure 1 of Takeo shows a partition member 14, 24, dividing said pressure receiving chamber into a primary fluid chamber 11 and an auxiliary fluid chamber 31; and a second orifice passage 5 for fluid communication between said primary fluid chamber and said auxiliary fluid chamber; wherein the oscillation of said oscillating plate would generate a pressure change in the auxiliary chamber. Takeo lacks the transmitting the pressure change to said primary chamber via said second orifice. Muramatsu teaches the concept of having an auxiliary chamber 46 being in between a primary chamber 34 and an oscillating plate 40; wherein the oscillation of said oscillating plate would generate a pressure change in the auxiliary chamber and said pressure change is transmitted to said primary chamber via said second orifice 54 to accomplish the task of dampening vibration while keeping the device in a compact

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form. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Takeo's device to have an auxiliary chamber being in between a primary chamber and an oscillating plate such as taught by Muramatsu wherein the oscillation of an oscillating plate would generate a pressure change in an auxiliary chamber and said pressure change is transmitted to a primary chamber via a second orifice to accomplish the task of dampening vibration while keeping the device in a compact form in order to save space in a vehicle.

Re: claims 11 and 12, Takeo shows that the first orifice passage is tuned to a low frequency and said second orifice passage is tuned to a high frequency in paragraph [0019].

Re: claim 13, Takeo further shows paragraph [0018], from page 25/42 to page 26/42, describing the operating of said oscillating plate as claimed; a static pressure control mechanism 25, 23 adapted to substantially statically change said fluid pressure in said pressure receiving chamber 11, so as to induce a substantially static elastic deformation of said elastic oscillating plate for changing a spring stiffness of said elastic oscillating plate.

5. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeo et al. (Japanese publication # 10-061715) in view of Muramatsu et al. (EP 0936376 A2).

Takeo's vibration damping device, as rejected above in claims 1 and 3, further shows first and second air conduits, not numbered but shown connecting the oscillating chamber 13 and the working air chamber 23, respectively, an active pressure regulating

switch valve 15, a static pressure regulating switch valve 25, a controller 8 wherein in paragraph [0019], Takeo shows that by connecting the various chambers to the atmosphere and the vacuum according a prescribed frequency, vibrations of idling, engine shaking or booming noise can be dampened. Takeo lacks the concept of controlling the active pressure regulating switch valve according to the phase and in particular the frequency and phase of the engine ignition pulse and to adjust said control signal according to the engine speed signal. Muramatsu et al. teach the concept of dampening vibration by controlling the active pressure regulating switch valve 66 according to the frequency and phase of the engine ignition pulse and to adjust the control signal according to the engine speed signal in figures 2, 3A-3D and column 18, lines 1-28, to advantageously taken into consideration the running condition of the vehicle to dampen vibration in a moving vehicle. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Takeo's vibration damping device to include the controlling scheme such as taught by Muramatsu to dampen vibration by controlling an active pressure regulating switch valve according to the frequency and phase of the engine ignition pulse and to adjust the control signal according to the engine speed signal to advantageously taken into consideration the running condition of the vehicle to dampen vibration in a moving vehicle as shown by Muramatsu in figures 2, 3A-3D and column 18, lines 1-28.



***Allowable Subject Matter***

6. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

7. Applicant's arguments filed 4/8/04 have been fully considered but they are not persuasive. Applicant argues that Takeo's static control mechanism would not induce a substantially static elastic deformation of the elastic oscillation plate due to the orifice at the bottom of the second mounting. Please note that in one condition, mentioned in the rejection above, when orifice 5 ceases to flow, Takeo's mechanism meets the claimed feature. The rejection is still deemed proper and is repeated above.

8. Please note also that the rejection has been modified to specifically referring to Takeo's Japanese document 10-061715. A copy of the translation has been sent to the Applicant with the Interview Summary on 4/28/04.

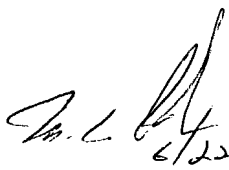
***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan Nguyen whose telephone number is 703-308-8347. The examiner can normally be reached on M-F, 8 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder can be reached on 703-308-3421. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-4177.

XLN  
XLN

  
6/22/2004  
**MATTHEW C. GRAHAM**  
**PRIMARY EXAMINER**  
**GROUP 310**